

CLAIMS

What is claimed is:

1. In a system comprising at least one external system and an integration module for facilitating communication with the at least one external system, a method for maintaining access to the at least one external system, the method comprising:

receiving a notification that a session for a user on at least one external system has been terminated;

upon receiving the notification, verifying that the user has an active session on the integration module;

when the user has the active session, searching the integration module for access information associated with the at least one external system; and

upon locating the access information associated with the user and the at least one external system, delivering the access information to the at least one external system to re-establish the session on the at least one external system and maintain access to the at least one external system.

2. The method as recited in claim 1, wherein the at least one external system and the integration module are included within an information system.

3. The method as recited in claim 1, wherein the at least one external system is external to an information system.

4. The method as recited in claim 1, wherein the access information comprises at least one credential.

5. The method as recited in claim 1, wherein the integration module controls access to the at least one external system.

6. The method as recited in claim 1, wherein the access information comprises a session identifier and a destination uniform resource locator.

7. The method as recited in claim 1, wherein delivering the access information comprises delivering the access information in a manner that maintains a seamless interface for the user that results in the user being unaware that the session on the at least one external system was terminated and the user was re-authenticated on the at least one external system.

8. The method as recited in claim 1, further comprising receiving from the at least one external system a one-time use uniform resource locator.

9. The method as recited in claim 8, further comprising delivering the one-time use uniform resource locator to a user module accessible to the user, the user module being configured to deliver the one-time use uniform resource locator to the at least one external system to request a session on the at least one external system.

10. The method as recited in claim 1, further comprising receiving from the at least one external system a session identifier and a destination uniform resource locator.

11. The method as recited in claim 10, further comprising delivering the session identifier and the destination uniform resource locator to a user module accessible to the user, the user module being configured to deliver the session identifier and the destination uniform resource locator to the at least one external system to request access to the at least one external system.

12. The method as recited in claim 1, further comprising, using a graphical user interface, requesting access to the at least one external system.

13. The method as recited in claim 12, wherein the graphical user interface comprises a header portion that is constantly displayed to the user while the user has an active session on the integration module and an external system web page when the user accesses the at least one external system.

14. The method as recited in claim 13, further comprising displaying the always-present header and the external system web page simultaneously with the header.

15. In a system comprising a plurality of external systems upon which a user module can create active sessions and an integration module that stores a time-out period and facilitates communication to a plurality of external systems, a method for coordinating maintenance of active sessions on the integration module and one or more of the plurality of external systems, the method comprising:

upon a user module transmitting data to an integration module following the expiration of a time-out period associated with the integration module, identifying upon which of a plurality of external systems the user module has an active session;

transmitting to each of the plurality of external systems upon which the user module has the active session a request to specify a last active time of the user module on the respective external systems of the plurality of external systems, the request having an associated request time;

receiving from the plurality of external systems a response identifying the last active time of the user module on each of the plurality of external systems; and

defining a last activity attribute for the integration module, the last activity attributed comprising a value equal to the last active time received from the plurality of external systems that is closest to the request time, wherein the active session is maintained upon the integration module and at least one of the plurality of external systems.

16. The method as recited in claim 15, wherein the integration module acts as an interface between the user and the plurality of external systems.

17. The method as recited in claim 15, wherein the system comprises at least one administrator, the administrator defining the time-out period.

18. The method as recited in claim 15, wherein the integration module controls access to the plurality of external systems.

19. The method as recited in claim 15, wherein the user module comprises a browser.

20. The method as recited in claim 15, wherein identifying upon which of the plurality of external systems the user module has the active session comprises searching a list of status information stored at the integration module.

21. The method as recited in claim 15, wherein identifying upon which of the plurality of external systems the user module has the active session comprises external session attributes.

22. The method as recited in claim 15, wherein transmitting a request to the plurality of external systems comprises identifying a last activity uniform resource locator associated with each of the plurality of external systems and delivering a request to the last activity uniform resource locator.

23. The method as recited in claim 15, where the last active attribute is the same for both the user module and the integration module.

24. The method as recited in claim 15, further comprising terminating the active session upon the integration module and de-authenticating the user from each of the plurality of external systems in the event that the last active time stored at the integration module exceeds the time-out period.

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WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

25. In a system comprising an external system and an integration module for facilitating communication between a user module and the external system, a method for re-authenticating a user with an external system, the method comprising:

transmitting to an integration module, from a user module through which an user accesses the at least one external system, a request to re-authenticate the user with the at least one external system upon the user module being denied access to the at least one external system;

receiving, at the at least one external system from the integration module, a request to reauthenticate the user, the request comprising at least one access credential; and

upon matching the access credential with a stored access credential at the at least one external system, delivering access information to the integration module, wherein the integration module delivers the access information to the user module to enable the user module to gain access to the at least one external system.

26. The method as recited in claim 25, wherein the access information comprises a session identifier and a destination uniform resource locator.

27. The method as recited in claim 25, wherein the access information comprises a one-time use uniform resource locator.

28. The method as recited in claim 25, further comprising displaying a graphical user interface to the user, the graphical user interface facilitating access to the integration module and the at least one external system.

29. The method as recited in claim 25, further comprising delivering, from the integration module to the at least one external system, to a request uniform resource locator the request to reauthenticate the user.

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A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

30. In a system comprising at least one external system and an integration module for facilitating communication between to at least one external system, a method for reestablishing a session on the at least one external system, the method comprising:

upon receiving a request from at least one user to access at least one external system, retrieving access information specific to the at least one external system stored within a user account on an integration module;

using the access information, requesting access to the at least one external system for the at least one user to create an active session on the at least one external system;

upon the integration module receiving a notification that the at least one user has been denied access to the at least one external system because of inactivity of the at least one user on the at least one external system, searching the integration module for the access information associated with the at least one external system; and

upon locating the access information related to the at least one user and the at least one external system, interfacing with the at least one external system to re-establish the active session on the at least one external system without notifying the at least one user that the at least one user was denied access to the at least one external system.

31. The method as recited in claim 30, wherein the at least one external system is external to an information system.

32. The method as recited in claim 30, wherein the access information comprises at least one uniform resource locator.

33. The method as recited in claim 30, wherein the access information comprises a username and a password.

34. The method as recited in claim 30, wherein the integration module controls access to the at least one external system.

35. The method as recited in claim 30, wherein the user module comprises a browser.

36. The method as recited in claim 30, wherein the access information comprises a session identifier and a destination uniform resource locator.

37. The method as recited in claim 30, wherein interfacing with the at least one external system comprises:

(a) delivering the access information to the at least one external system for authentication;

(b) upon the at least one external system authenticating the access information, receiving a session identifier or a one-time usage uniform resource locator from the at least one external system for use by the user module in reestablishing the active session on the at least one external system; and

(c) delivering the session identifier or the one-time usage uniform resource locator to the user module to enable the user module to reestablish the active session.

38. The method as recited in claim 37, further comprising delivering the session identifier or the one-time usage uniform resource locator to the at least one external system.

39. The method as recited in claim 38, wherein upon the at least one external system receiving the one-time usage uniform resource locator, delivering a cookie to the user module.

40. The method as recited in claim 38, wherein upon the at least one external system receiving the session identifier, redirecting the user module to the uniform resource locator.

41. The method as recited in claim 30, further comprising:

(a) in the event that the at least one external system rejects access for the user, querying the user for new access information, the new access information comprising changes made to the access information by the user upon the user accessing the at least one external system directly without interfacing with the at least one external system through the integration module; and

(b) delivering the new access information to the at least one external system to obtain access for the at least one user module.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

FOOTNOTES

42. A computer product for implementing, in a system comprising one or more external systems and an integration module for facilitating communication to one or more external systems, a method for seamlessly communicating information and data to the one or more external systems when a session on the one or more external systems has been terminated, the computer program product comprising:

a computer readable medium carrying computer-executable instructions for implementing the method, wherein the computer-executable instructions causing the system to perform:

a step for receiving a notification, at an integration module from one of the one or more external systems, that an external system session upon the one external system has been terminated and a user module is denied access to the one external system;

upon receiving the notification, a verifying that the user module has as an active session on the integration module;

searching the integration module for access information associated with the one external system;

upon locating the access information associated with the user and the one external system, delivering the access information to the external system to re-establish the session on the one external system and maintain access to the one external system.

43. The computer product as recited in claim 42, wherein the computer-executable instructions causing delivering the access information in a manner that maintains a seamless interface for the user that results in the user being unaware that the session on the

at least one external system was terminated and the user was re-authenticated on the at least one external system.

44. The computer product as recited in claim 42, wherein the access information comprises at least one credential.

45. The computer product as recited in claim 42, wherein the access information comprises a session identifier and a destination uniform resource locator.

46. The computer product as recited in claim 42, wherein the computer-executable instructions causing receiving from the at least one external system a one-time use uniform resource locator.

47. The computer product as recited in claim 46, wherein the computer-executable instructions causing delivering the one-time use uniform resource locator to a user module accessible to the user, the user module being configured to deliver the one-time use uniform resource locator to the at least one external system to request a session on the at least one external system.

48. The computer product as recited in claim 42, wherein the computer-executable instructions causing receiving from the at least one external system a session identifier and a destination uniform resource locator.

49. The computer product as recited in claim 48, wherein the computer-executable instructions causing delivering the session identifier and the destination uniform resource locator to a user module accessible to the user, the user module being configured to deliver the session identifier and the destination uniform resource locator to the at least one external system to request access to the at least one external system.

50. The computer product as recited in claim 42, wherein the computer-executable instructions causing requesting access to the at least one external system using a graphical user interface.

51. The computer product as recited in claim 42, wherein the computer-executable instructions causing the graphical user interface, comprises a header portion, to be constantly displayed to the user while the user has an active session on the integration module and an external system web page when the user accesses the at least one external system.

52. The computer product as recited in claim 42, wherein the computer-executable instructions causing displaying of the always-present header and the external system web page simultaneously with the header.

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CLERK OF DISTRICT COURT
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WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

53. A computer product for implementing, in a system comprising one or more external systems and an integration module for facilitating communication between a user module and the one or more external systems, a method for controlling access to the one or more external systems, the computer program product comprising:

a computer readable medium carrying computer-executable instructions for implementing the method, wherein the computer-executable instructions, when executed by the integration module, cause the system to perform:

upon a user module requesting or transmitting data to an integration module after a time-out period, identify upon which of a plurality of external systems a user module has an active session;

transmitting to the one or more external systems to which the user module has an active session a request to specify a last active time of the user module on the one or more external systems, the request having an associated request time;

receiving from the one or more external systems a response identifying the last active time of the user module on each of one or more external systems; and

defining a last activity attribute for the integration module, the last activity attributed comprising a value equal to the last active time received from the one or more external systems that is closest to the request time, wherein an active session is maintained upon the integration module and at least one of the one or more external systems.